June 9, 1999

MEMORANDUM

TO: Orville D. Green, Assistant Administrator
Air & Hazardous Waste

FROM: Susan J. Richards, Chief
Air Quality Permitting Bureau
Air & Hazardous Waste

SUBJECT: Issuance of Revised Tier II Operating Permit (#045-00003) to Unimin Corporation; Emmett, Idaho

PROJECT DESCRIPTION

This project is for the issuance of a revised Tier II Operating Permit (OP) for Unimin Corporation (Unimin) located in Emmett, Idaho, in order to incorporate updated emission factors. The emissions sources of the facility are: raw sand unloading and feeding, hoppers, conveyor and screw belts, bucket elevators, fluidized bed dryer, natural gas burner, vibrating screens, bagging stations, and bulk loading stations. Fugitive emissions are produced from sand stockpiles and from haul roads (paved and unpaved).

DISCUSSION

On August 31, 1998, DEQ received an application requesting a modification of Unimin's existing Tier II OP to include updated emission factors. On October 30, 1998, Unimin requested DEQ to cease processing of their Tier II OP modification. On March 17, 1999, Unimin requested DEQ to proceed with the issuance of their modified Tier II OP. As this revision results in a decrease in emissions, no public comment will be provided as per IDAPA 16.01.01.404.04.

FEES

Fees apply to this facility in accordance with IDAPA 16.01.01.470. The facility is subject to permit application fees for this revised Tier II OP of $500.

RECOMMENDATIONS

Based on the review of its existing Tier II OP, information provided by the company, and all applicable state and federal rules and regulations concerning the revision of a Tier II OP, the Bureau recommends that Unimin Corporation be issued a revised Tier II OP. The facility has paid the required Tier II application fee of five hundred dollars ($500.00).

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cc: S. West, Boise Regional Office
Source File (045-00003)
COF

May 5, 1999

MEMORANDUM

TO: Susan J. Richards, Chief
Air Quality Permitting Bureau
Air & Hazardous Waste

FROM: Thomas Lundahl, Air Quality Engineer
Air Quality Permitting Bureau
Operating Permits Section

THROUGH: Daniel P. Salgado, Permits Manager
Air Quality Permitting Bureau
Operating Permits Section

SUBJECT: Technical Analysis for Revision of Tier II Operating Permit (#045-0003)
Unimin Corporation (Emmett)

PURPOSE

The purpose for this memorandum is to satisfy the requirements of IDAPA 16.01.01 Sections 404.04 (Rules for the Control of Air Pollution in Idaho) (Rules) for revision of Tier II Operating Permits.

PROJECT DESCRIPTION

This project is for the issuance of a revised Tier II Operating Permit (OP) for Unimin Corporation (Unimin) located at Emmett, Idaho, in order to incorporate updated emission factors. The emissions sources of the facility are: raw sand unloading and feeding, hoppers, conveyor and screw belts, bucket elevators, fluidized bed dryer, natural gas burner, vibrating screens, bagging stations, and bulk loading stations. Fugitive emissions are produced from sand stockpiles and from haul roads (paved and unpaved).

FACILITY DESCRIPTION

Unimin is an industrial sand processing plant. Unimin mines a feldspathic sand from the Zierold pit which is approximately seven (7) miles away from the processing plant. Raw sand is stockpiled and then processed (wet screening and milling) into the Wet Plant. Damp, processed sand is stockpiled and then dried using a natural gas fired, fluidized bed dryer. Dry sand is screened and bagged or bulk loaded into trucks or railcars.

Facility processes include, but are not limited to, the following:

Wet Plant Feeding and Processing

A front-end loader transfers wet raw sand from stockpiles to a hopper, HO-01. Hopper HO-01 transfers the material to feeder, FE-01, which then transfers the material to belt conveyor BC-01. After that, water is added to the process, and the sand is wet screened by two vibrating screens, VS-12 and VS-13. Wet milling occurs in rod mill RD-01.

Dryer Feeding Operation

A front-end loader transfers wet sand from stockpiles to a hopper, HO-02. Hopper HO-02 transfers the material to screw conveyor, SC-01, which then transfers the material to a belt conveyor BC-02. After that, sand is transferred to bucket elevator BE-01, which is controlled by DC-01, and then to the dryer DR-01, which is controlled by DC-03.

Loadout Operations

A front-end loader transfers damp sand from stockpiles to hopper, HO-03, which transfers the material to a belt conveyor BC-12. All loadout operations are controlled by either DC-02 or DC-04, except for loadout operation (which includes conveying to hopper HO-04, Bulk loading 11C, and belt conveying BC-11).

This project is for an Operating Permit (OP) for the following existing point and fugitive emission sources.

Point Sources:

(1) Dust Collector DC-01 Stack: Emissions from this stack are controlled by a wet scrubber DC-01.

The stack data are the following:

UTM-X Coordinate (KM)	536.741
UTM-Y Coordinate (KM)	4857.149
Stack Exit Height (ft)	38.0
Stack Exit Diameter (ft)	1.13
Stack Exit Flow Rate (ACFM)	12,000
Stack Exit Temperature (°F)	Ambient

(2) Dust Collector DC-02 Stack: Emissions from this stack are controlled by a wet scrubber DC-02.

The stack data are the following:

UTM-X Coordinate (KM)	536.763
UTM-Y Coordinate (KM)	4857.163
Stack Exit Height (ft)	25.0
Stack Exit Diameter (ft)	1.13
Stack Exit Flow Rate (ACFM)	14,000
Stack Exit Temperature (°F)	Ambient

(3) Dust Collector DC-03 Stack: Emissions from this stack are controlled by a wet scrubber DC-03.

The stack data are the following:

UTM-X Coordinate (KM)	536.760
UTM-Y Coordinate (KM)	4857.164
Stack Exit Height (ft)	37.0
Stack Exit Diameter (ft)	1.41
Stack Exit Flow Rate (ACFM)	21,000
Stack Exit Temperature (°F)	Ambient

(4) Dust Collector DC-04 Stack: Emissions from this stack are controlled by a wet scrubber DC-04.

The stack data are the following:

UTM-X Coordinate (KM)	536.780
UTM-Y Coordinate (KM)	4857.176
Stack Exit Height (ft)	20.0
Stack Exit Diameter (ft)	0.85
Stack Exit Flow Rate (ACFM)	6,000
Stack Exit Temperature (°F)	Ambient

(5) Wet Plant feeding operation

(6) Dryer feeding operation

(7) Product loading operation

Fugitive Sources:

(1) Haul roads
(2) Stockpiles

A more detailed process description can be found in the Tier II OP application materials and in the facility's source file.

SUMMARY OF EVENTS

On August 31, 1998, DEQ received an application requesting a modification of Unimin's existing Tier II OP to include updated emission factors. On October 30, 1998, Unimin requested DEQ to cease processing of their Tier II OP modification. On March 17, 1999, Unimin requested DEQ to proceed with the issuance of their modified Tier II OP. No public comment will be provided as per IDAPA 16.01.01.404.04 Rules.

On October 28, 1996, Unimin performed a source test on Dust Collector DC-02 to comply with 40 CFR 60.8. During this test, Unimin averaged 16.07 tons per hour of material processed across VS-07 and VS-08. According to General Provision I of the operating permit, the facility is allowed to operate at 120% of the process rate achieved during the performance test. Unimin has therefore been limited to process a maximum of 19.27 tons per hour of material across VS-07 and VS-08. This limit can only be exceeded while conducting further source testing.

DISCUSSION

1. Emission Estimates

Emission estimates were provided by Unimin Corporation. The calculations were resubmitted by the applicant according to DEQ's request. DEQ also estimated the emissions from all facility sources (attached spreadsheet). The hourly emissions calculations were based on the maximum production rate of each equipment/process, and not the maximum rated capacity of that equipment/process. The maximum production rate of any equipment/process is limited to the production rates of the preceding and/or the following equipment/process. The annual emissions calculations were based on 8760 hours per year operation.

All emissions from equipment/processes were estimated using emissions factors furnished by AP-42, 5th edition. Emissions factors from AP-42, 4th edition where used when such emissions factors are not available in AP-42, 5th edition. Emissions factors for Sand and Gravel Processing and/or Crushed Stone Processing were used to estimate the emissions from Unimin - Emmett. The corresponding reference for each emission factor is documented in the attached spreadsheet.

2. Modeling

Allowable emissions were decreased, therefore, no impact analysis modeling for various emissions from the facility's point sources was performed.

3. Area Classification

Unimin, Gem County, Idaho, is located in AQCR 63. The area is classified as attainment or unclassifiable for all federal and state criteria air pollutants (e.g., PM, PM-10, CO, NO_x, VOCs, and SO_x).

4. Facility Classification

The facility is not a designated facility as defined in IDAPA 16.01.01.006.25. The facility is classified as an A2 source because, the actual emissions of any criteria pollutant is less than 100 tons per year.

5. Regulatory Review

This OP is subject to the following permitting requirements:

a.	IDAPA 16.01.01.401	Tier II Operating Permit
b.	IDAPA 16.01.01.403	Permit Requirements for Tier II Sources
c.	IDAPA 16.01.01.404.01(c)	Opportunity for Public Comment
d.	IDAPA 16.01.01.404.04	Authority to Revise or Renew Operating Permits
e.	IDAPA 16.01.01.406	Obligation to Comply
f.	IDAPA 16.01.01.470	Permit Application Fees for Tier II Permits
g.	IDAPA 16.01.01.625	Visible Emission Limitation
h.	IDAPA 16.01.01.650	General Rules for the Control of Fugitive Dust
i.	40 CFR 60 Subpart OOO	Standards of Performance for Nonmetallic Mineral Processing Plants

6. Unimin operates four (4), high efficiency wet scrubbers: DC-01, DC-02, DC-03, DC-04. The required efficiencies of these wet scrubbers are: 84.38%, 95.30%, 99.83%, and 97.07% respectively. As long as the pressure drop and scrubbing media flowrate to the wet scrubbers is maintained in accordance with manufacturer's specifications, these efficiencies are deemed to be met.

FEES

Fees apply to this facility in accordance with IDAPA 16.01.01.470. The facility is subject to permit application fees for this revised Tier II OP of $500.

RECOMMENDATIONS

Based on the review of its existing Tier II OP, information provided by the company, and all applicable state and federal rules and regulations concerning the revision of a Tier II OP, the Bureau recommends that Unimin Corporation be issued a revised Tier II Operating Permit. The facility has been notified in writing of the required Tier II application fee of five hundred dollars ($500.00). The permit will be issued upon receipt of the fee.

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Attachments
cc: S. West, Boise Regional Office
Source File (045-00003)
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